

## HIGH-SPEED MODEM WITH UPLINK REMOTE-ECHO CANCELLER

### Abstract of the Disclosure

A high-speed modem operates at speeds as high as 64kbps in both the downlink direction from a digital modem to an analog subscriber and at an increased speed in the uplink direction from the analog subscriber back to the digital modem. Known systems provide a 56kbps connection in the downlink direction but only provide for as high as a 33.6kbps connection in the uplink direction. The present invention centers on the development of apparatus, systems, and methods for remote-echo cancellation whereby signal processing in the modem endpoints is used to remotely cancel an echo component at the input to a network-interface's ADC. Heretofore, this echo component has limited the achievable uplink data rate. Hence the present invention enables symmetric 56kbps modem connections using POTS lines or the POTS channel within a DSL when line conditions warrant.

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